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ANTHEROZOIDS OF MOSSES.

EVER since I began the study of the mosses nearly ten years ago, I have been searching for moss antheridia with motile antherozoids. My search was entirely fruitless until the spring of 1899, when I collected some male heads of *Polytrichum juniperinum* about May 4th, a week or ten days after the snow had melted from over them. These heads were allowed to partially dry in a plant press and were then kept about a week or rather less in this half-dried condition. Then on mounting the antherida in water whole swarms of antherozoids were seen not free, but swimming with a rapid rotary motion, each inside of its own little capsule.

P. commune starts earlier, and I have always been too late in my attempts to get antherozoids from that species.

Let those who wish to study these interesting objects collect the male heads of *P. juniperinum* about two weeks after the snow has gone from off them, and proceed as above. I may add that not one botanist in a hundred has ever seen these bodies in motion.—*A. J. Grout.*

DISTRIBUTION OF THE EASTERN SPECIES OF MNIUM.

By Elizabeth G. Britton.

THE species of this genus are easily recognized by their leaves which are either doubly toothed, singly toothed, or entire, and in all but two species bordered by longer, narrower cells.

A.—Leaves biserrate, margins bordered.

1. *M. hornum* (L.) Hedw. In swamps and banks of streams in woods. Along the Bronx river, Bronx Park, N. Y. City; Can., N. B., N. S., Nf., Ont., Me., N. H., Vt., Mass., R. Id., Conn., N. Y., N. J., Pa., Va., W. Va., N. C.

2. *M. orthorhynchum* Br. & Sch. On rocks along streams. Gr., Lab., Can., Ont., Brit. Am., N. Y., Pa., Colo., Mont.

   Var. *tenellum* Sch. Drummond's Mosses No. 529. (*M. inclinatum* Mac. Cat. 141) Ont., R. M., B. C.

   (*M. lycopodioides* of L. & J. Man. non Hook.). (*M. pseudolycopodioides* C. M. & Kindb.) seems to be referable to *M. orthorhynchum*, as none of the American specimens thus far show any distinctive characters for separating. The taller plants with globose capsules resembling *M. hornum* of Europe (Rab. Bry. Eu. No. 39), have not thus far been seen from N. Am.

3. *M. riparium* Mitt. (*M. parvum* Aust. ms. in herb.) Sull. & Lesq. Musci bor Am., No. 298, *fide* Jaeger Adumb. 1873.

Canada, Macoun *fide* Kindberg, Pa., Muhlenberg in herb. Hedwig, *fide* Cardot. On wet rocks in shade along banks of streams, rarely fruiting. Rockland Co., N. Y., and Bergen Co., N. J. Austin.

4. ***M. marginatum*** (Dicks.) P. B. (***M. serratum*** Schrad. ***M. Niagaræ*** Kindb.) Crevices of rocks and margins of streams. Can.. N. B., Ont., Minn., Vt., N. Y., N. J., Pa., O., Va., Mont., Idaho.
5. ***M. spinulosum*** Br. & Sch. On rocks and banks in woods. Can., Que., Ont., C. W., N. H., Vt., N. Y., O., Mont., I., Wash., B. C., Alaska. (***M. spinosum*** (Voit.) Schw. has not been recorded from the Eastern States except for the reference in the foot-note to ***M. spinulosum*** in L. & J. Man. p. 247).

B.—Leaves serrate, teeth single, margins bordered.

6. ***M. rostratum*** Schrad. Wet rocks and banks in woods. Can., N. S., Ont., C. W., V. Id., N. E., Conn., N. Y., N. J., Pa., O., Va., Mont., Wyo., Or.
7. ***M. cuspidatum*** (L.) Leyss. (***M. sylvaticum***, Lindb.) Our commonest species. Damp ground in shade. Reported from nearly every State and Territory in U. S.
8. ***M. Drummondii*** Br. & Sch. On the ground in shady places. Can.. N. B., Ont., Mich., Me., N. H., Vt., N. Y.
9. ***M. affine*** Bland. (***M. cuspidatum*** Neck.) In bogs and wet woods; often sterile or forming only long showy stolons. N. Y., N. J., Pa., Va., W. Va.

   Var. ***ciliare*** (Grev.) C. M. (***M. macrociliare*** Kindb. in part). More common than the species, from which it differs by the long cilia-toothed leaves, single capsules on a seta which is red and bent below. Me., N. H., Vt., Mass., Conn., N. Y., N. J., Pa., O., Va., W. Va., Ga., La., Mo., Wis., Mont., Cal., B. C.

   Var. ***rugicum*** Br. & Sch. Leaves slightly serrate or entire. Can., N. H., Mass., Vt., N. Y., N. J., O., Va., Tenn., La.
10. ***M. medium***, Br. & Sch. Wet rocks, Little Falls, N. J., Austin. Can., N. B., Ont., P. Edw. Id., N. H., Mass., Vt., N. Y., N. J., Minn.

C.—Leaves entire or simply serrate; not bordered.

11. ***M. stellare*** Reich. Shaded banks, cliffs, rocks and roots of trees in swamps; not rare but seldom fruiting. Can., N. B., N. S., Ont., R. M., N. H., Mass., Vt., N. Y., N. J., O.
12. ***M. cinclidioides*** (Blytt.) Huebn. Swamps and wet woods, sterile. Palisades of N. J., Austin. Gr., Can., Lab., V. Id., Me., N. H., Mass., N. Y., N. J., Pa.

D.—Leaves bordered, entire.

13. ***M. punctatum*** (L.) Hedw. On rocks and logs in streams, on cliffs. Can., Nf., N. S., Miq., Ont., Me., N. H., Conn.,

N. Y., N. J., O., Va., W. Va., Wis. On stones along the Bronx river, Bronx Park.

Var. *elatum* B. S. In bogs and swamps, large tomentose plants. Can., N. B., Ont., N. W. T. and Alaska, Me., N. H., Mass., Vt., N. Y., N. J., Pa., Va., Mich., Idaho.

14. *M. subglobosum* Br. & Sch. (*M. pseudopunctatum* Br. & Sch.) In bogs and swamps, especially in peat. Gr., Nf., Ont., Me., Mont., Alaska and Yukon Terr.
15. *M. hymenophylloides* Hubn. Rare on cliffs, sterile. Gr., Lab., Can., R. M., Vt., N. Y.

A NEW SPECIES OF MNIUM FROM IDAHO AND MONTANA.

BY E. G. BRITTON AND R. S. WILLIAMS.

MNIUM NUDUM, n. sp. R. S. Williams. Plants in loose, extensive mats of a dark green color, stems red, naked below, arising from a radiculose, horizontal portion seldom more than 2-3$^{\text{cm.}}$ high; cross-section of stem with three sharp projecting angles and two rounded ones, in each of which is a small leaf-trace, central strand well developed, outer walls of one row of thick-walled red cells; leaves crowded at the apex in the gametophyte, largest at summit, often 5–8$^{\text{mm.}}$ long by 4–5$^{\text{mm.}}$ wide, slightly contracted at base, not decurrent, margins entire, not thickened, bordered by one or two rows of pale elongated cells, apex rounded, retuse or apiculate; vein usually vanishing below the apex, but occasionally confluent with the margin, broad at base gradually tapering, with a central colored strand; cells slightly elongated transversely, 080–.108$^{\text{mm.}}$; hexagonal, not collenchymatic, inflated.

Dioicous, male plants often leafless except at apex; seta bright red, 1-2.5$^{\text{cm.}}$ high; capsules ovoid, 4–5$^{\text{mm.}}$ long, pendent, becoming horizontal when old; lid apiculate, mouth bordered by several rows of dark cells; annulus large, simple; peristome slightly longer than the endostome, teeth with about 30 rows of outer plates and 35 inner lamellæ; membrane of endostome solid, not perforate, carinate segments split along the keel in the upper part, cilia three; endostome and the upper part of the teeth papillose; spores .027–.032$^{\text{mm.}}$, maturing in early spring.

Differs from *M. subglobosum*, to which it has been referred, in its dioicous inflorescence, naked stems and shorter pedicels, larger peristome with more numerous lamellæ; from *M. punctatum* in the not thickened border of the leaves and the naked stems, not radiculose; and from *M. glabrescens* also in the not thickened border of the leaf, and stouter, more erect pedicel.